

10/14/04

Appl. No. 10/667,958  
Atty. Docket No. CM2632MC  
Amdt. dated 10/14/2004  
Reply to Office Action of 07/14/2004  
Customer No. 27752

### REMARKS

#### Application Amendments

Claims 1-3 and 5-14 are pending in the present application. Claim 4 has been canceled. No additional claims fee is believed to be due.

Claim 2 has been amended as shown above to delete the phrase "as described herein". Support for this amendment can be found in the original claim as well as at page 11, line 1 to page 12, line 10 of the specification.

Claims 1, 11, and 12 have been amended as shown above to recite that the respective compositions have "a pH from about 9.5 to about 11". Support for this amendment can be found at page 15, line 33 to page 16, line 1 of the specification.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

#### Claim Objections

Claim 2 is objected to because of the informality of reciting the phrase "as described herein". This claim has been amended as described above to delete this phrase, therefore, it is believed that the present objection has been obviated.

#### Provisional Double Patenting Rejection Over Co-Pending US Application No. 10/667,878

Claims 1-10 and 12-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-5, 9-22, and 26-30 of co-pending US Application No. 10/667,878.

Upon receiving notice of allowance of US Application No. 10/667,878, Applicant is prepared to file a properly executed terminal disclaimer in compliance with 37 CFR 1.321(c). Therefore, it is believed that this provisional rejection can be overcome.

#### Rejections Under 35 USC 102(b) and 103(a) Over US Patent No. 6,004,355 to Dias et al.

Claims 1-4, 6-10, and 13 are rejected under 35 USC 102(b) as being anticipated by, or, alternatively, under 35 USC 103(a) as being obvious over, US Patent No. 6,004,355 to Dias et al. ("Dias"). The Examiner asserts that Dias teaches a hair coloring composition comprising an oxidizing agent and a sequestrant (chelant), wherein the composition has a pH of 10, wherein the composition is an aqueous solution, wherein the oxidizing agent comprises from 0.1% to 4% of aqueous hydrogen peroxide, wherein the chelant is present at an amount from 0.01% to 10%, wherein the composition further comprises an oxidative dye precursor. The Examiner also asserts that Dias teaches a kit comprising an oxidizing agent and one or more coloring agents. The

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Examiner then asserts that because Dias teaches the same hair treating ingredients of Applicants' composition, the compositions of Dias would inherently have the same physical properties of log ratio, hydrogen peroxide decomposition ratio, and ability to form a hexadendate complex with  $\text{Cu}^{2+}$ . Thus, the Examiner concludes that Dias anticipates Applicants' claims. Alternatively, the Examiner asserts that it would be obvious to one of skill in the art that the compositions of Dias would have similar physical properties as those claimed by Applicants, absent unexpected results. Applicants respectfully traverse the present rejection based on the following comments.

As currently amended, Applicants' claim 1 recites a composition comprising an oxidizing agent and a chelant (L) having a  $(\log K_{\text{CuL}})/(\log K_{\text{CaL}})$  ratio calculated at pH 10 of at least about 3.20, wherein the composition has a pH from about 9.5 to about 11. Applicants' compositions containing chelants having a stronger affinity for transition metal ions such as  $\text{Cu}^{2+}$  than for alkaline earth metal ions such as  $\text{Ca}^{2+}$  at pH 10 can efficiently prevent hair damage that occurs during oxidative treatments, such as bleaching and dyeing, which are carried out in the pH range claimed by Applicants. It is believed that the chelants act to chelate environmental and intrinsic heavy metal ions which would otherwise react with the oxidizing agent to give harmful species such as free radicals which oxidize the disulfide bonds of hair.

In contrast, Dias discloses hair color compositions comprising a peroxygen oxidizing agent, an organic peroxyacid oxidizing aid, and oxidative hair color agents, wherein the compositions impart minimal damage to hair fibers at lower pH. See column 2, lines 43-48 of Dias. While Dias does not define "lower pH", Dias refers to conventional peroxide treatment which leads to hair damage as requiring "high pH (>pH 9)". See column 1, line 63 to column 2, line 3 of Dias. And, although Dias broadly describes hair color compositions having a pH from about 2 to about 12, the compositions of Dias require a peroxyacid oxidizing aid which must be at a much narrower range of pH to function as intended in Dias. It is known in the art that the optimum pH for an oxidizing agent is at its pKa. Dias specifically teaches that the pKa of the peroxyacid oxidizing aids are in the range of from about 7 to about 9.5. See column 4, lines 45-50 of Dias. At a pH of about 10, the peroxyacid oxidizing aids of Dias become deprotonated and, as such, are much weaker oxidizing agents. Further, Applicants have found that, at a pH above about 8, the peroxyacid oxidizing aids of Dias are more damaging to hair than oxidizing agents such as hydrogen peroxide.

Because the compositions of Dias impart minimal damage to hair *only* at a pH range below the pH range of Applicants' claim 1, each and every element of Applicants' claim 1 is not disclosed in Dias. Applicants' claims 2-3, 6-10, and 13 contain the limitations of claim 1. Therefore, Applicants' claims 1-3, 6-10, and 13 are novel over Dias.

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Alternatively, Applicants' claimed invention is not obvious in view of Dias. Dias fails to teach or suggest a composition comprising an oxidizing agent and a chelant, wherein the composition has a pH from about 9.5 to about 11, and wherein the chelant is in an amount sufficient to provide a damage benefit of less than 160 cysteic acid units as claimed. Rather, as discussed above, Dias describes hair color compositions which impart minimal damage to hair fibers at lower pH. Dias refers to conventional peroxide treatment which leads to hair damage as requiring "high pH (>pH 9)". and, thus, teaches away from compositions having a pH greater than 9. As discussed above, Applicants' compositions comprising an oxidizing agent and chelants can protect hair from damage that occurs during oxidative treatments which are carried out at a pH from about 9.5 to about 11. Because Dias teaches away from compositions having a pH from about 9.5 to about 11 which can protect hair from oxidative damage, Applicants' claims as currently amended would not have been obvious to one of ordinary skill in the art. Therefore, Applicants' claims 1-3, 6-10, and 13 are novel and nonobvious over Dias.

Rejections Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al. in view of US Patent No. 5,100,436 to Wenke

Claim 5 is rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias") in view of US Patent No. 5,100,436 to Wenke ("Wenke"). The Examiner asserts that Dias teaches hair coloring compositions, as described above, wherein the compositions are thickened aqueous compositions. The Examiner notes that Dias does not teach a hair treatment composition in the form of an oil-in-water emulsion. Then, the Examiner asserts that Wenke teaches a composition comprising oxidative dye precursors, oxidizing agents, and chelating agents, wherein the composition may be in the form of an emulsion, suspension, lotion, or gel. Thus, the Examiner concludes that it would have been obvious to one of skill in the art to formulate the composition of Dias in an emulsion because Wenke teaches different forms of hair dyeing compositions, absent unexpected results. Applicants respectfully traverse the present rejection based on the following comments.

The combination of Dias and Wenke does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness (MPEP 2143.03). Applicants' claim 5 contains the limitations of claim 1. As currently amended, Applicants' claim 1 recites a composition comprising an oxidizing agent and a chelant (L) having a  $(\log K_{Cu})/(\log K_{CuL})$  ratio calculated at pH 10 of at least about 3.20, wherein the composition has a pH from about 9.5 to about 11. Dias, as discussed above, teaches away from Applicants' compositions having a pH from about 9.5 to about 11 which can protect hair from oxidative damage. Similarly, Wenke fails to teach or suggest oxidative treatment of hair at a pH from about 9.5 to about 11

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wherein the hair is protected from oxidative damage. Instead, Wenke teaches that oxidatively dyeing the hair "at a pH range close to neutral, typically from about 6 to about 8.5" is "far less harmful to hair than pH's of from 9 to 10, which are required with conventional oxidative hair dyeing processes." See column 6, lines 42-48 of Wenke. In contrast, and as discussed above, Applicants' compositions comprising an oxidizing agent and chelants can protect hair from damage that occurs during oxidative treatments which are carried out at a pH from about 9.5 to about 11.

Additionally, although Wenke discloses that its compositions may be in the form of an emulsion, one of skill in the art would not be motivated to formulate the composition of Dias into an emulsion because the peroxyacid oxidizing aids of Dias, which are required components of the compositions of Dias, are difficult to solubilize, especially in an oil-in-water emulsion.

Therefore, the combination of Dias and Wenke fails to establish a *prima facie* case of obviousness with respect to Applicants' currently amended claim 1, as well as Applicants' claim 5. As a result, Applicants' claim 5 is novel and nonobvious over Dias in view of Wenke.

Rejections Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al.

Claims 11, 12, and 14 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias"). The Examiner asserts that Dias teaches methods for coloring hair comprising the steps of applying compositions that comprise an oxidizing agent, oxidation dye precursors, and chelating agents. The Examiner notes that Dias does not teach Applicants' claimed methods with sufficient specificity to constitute anticipation of the claims. However, the Examiner asserts that it would have been obvious to one of skill in the art to use the methods of Dias with a composition that comprises similar ingredients to the compositions of Dias. Applicants respectfully traverse the present rejection based on the following comments.

As currently amended, Applicants' claim 11 recites a method which requires (i) contacting hair with a first composition comprising a chelant (L) having a  $(\log K_{CaL})/(\log K_{CaL})$  ratio calculated at pH 10 of at least about 3.20, and (ii) contacting hair with a second composition comprising an oxidizing agent immediately after step (i), wherein said second composition has a pH from about 9.5 to about 11. In addition, Applicants' claim 12, as currently amended, recites a method which requires (i) contacting hair with a first composition comprising an oxidizing agent, (ii) contacting hair with a second composition comprising a chelant (L) having a  $(\log K_{CaL})/(\log K_{CaL})$  ratio calculated at pH 10 of at least about 3.20, and (iii) contacting hair with a third composition comprising an oxidizing agent, wherein the steps are carried out as claimed, and wherein said first and third compositions have a pH from about 9.5 to about 11. Applicants' first composition of claim 11 and second composition of claim 12 can protect hair

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from damage that occurs during oxidative treatments, such as bleaching and dyeing, which are carried out in the pH range claimed by Applicants.

In contrast, Dias discloses methods which comprise applying hair color compositions comprising a peroxygen oxidizing agent, an organic peroxyacid oxidizing aid, and oxidative hair color agents, wherein the compositions impart minimal damage to hair fibers *at lower pH*. As discussed above, the compositions of Dias require a peroxyacid oxidizing aid which must be at a much narrower range of pH to function as intended in Dias. It is known in the art that the optimum pH for an oxidizing agent is at its pKa. Dias specifically teaches that the pKa of the peroxyacid oxidizing aids are in the range of from about 7 to about 9.5. Additionally, Dias discusses conventional peroxide treatment which leads to hair damage as requiring "high pH (>pH 9)". As a result, Dias teaches away from compositions having a pH greater than 9.

Accordingly, Applicants' claims 11 and 12 would not have been obvious to one of ordinary skill in the art. Claim 14 contains the limitations of claim 1, which was discussed above. Therefore, Applicants' claims 11, 12, and 14 are novel and nonobvious over Dias.

#### CONCLUSION

In light of the amendments and remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicant respectfully requests reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1-16.

Respectfully submitted,

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